Bench Mark: F.A.I. 57 STATE OF ILLINOIS Chisel "" on top of southeast wingwall of northbound I-57 bridge, Structure Number 038-0159. Elevation 655.74 DEPARTMENT OF TRANSPORTATION FED, ROAD DIST. NO. **(38-3,4)RS-2, (38-4)BR1 Existing Structures: 174'-11'2" Sheet 1 of 11 Sheets SN 038-0158, Southbound I-57 Bridge Local Tangent O SN 038-0159, Northbound I-57 Bridge Dimensions at Rt. L's to Sta. 399+21.00 The structures were built in 1967 as single span Reinforced Concrete Slab Bridges Local Tangent • Sta. 399+21.00 R. 11 E. R. 14 W. supported by Closed Concrete Abutments. Vertical cantilever retaining walls with spread 1'-0" 86'-334" 86'-73" 1'-0" 3rd. P.M. | 2nd. P.M. footings connect the two structures on either side of the channel in the median area of the highway. The superstructures were resurfaced in 2000 with a microsilica concrete 8'-0" -4'-0" 4'-0' overlay. The bridges measure 21'-11'2" back to back of abutments and 42'-4" out to out Shidr. Shidr. of deck. The structures will be replaced with a Double Box Culvert. 12'-0" 12'-0" 10'-0" Dimensions at Rt. L's Varies 10'-0" 12'-0" 12'-0" 48'-0" Varies to € F.A.I. 57 Shidr Shidr Existing Median Proposed Salvage: Retaining Wall 641.65 No Salvage Phoebe Nesting 1.5% 1.5%4.0% 4.0% 1.5% 1.5% 4.0% 4.0% H.W. Elev. (50 Yr.) 648.50 11 D.S.F.L. Elev. One lane of traffic shall be maintained in each direction utilizing stage construction. 641.35 0.17% LOCATION PLAN GENERAL NOTES Existing Invert Elev Reinforcement bars shall conform to the requirements of ASTM A 706 Structure (Typ.) 641.40 641.10 Gr 60. APPROVED Reinforcement bars designated (E) shall be epoxy coated. S.P.B.G.R., Type A LONGITUDINAL SECTION For Structural Adequacy Only Sta. 401+00 Elev. 655.04 Plan dimensions and details relative to existing plans are subject to nominal Std. 630001 construction variations. The Contractor shall field verify existing dimensions and (Looking South) details affecting new construction and make necessary approved adjustments prior Note: See roadway plans for existing and to construction or ordering of materials. Such variations shall not be cause for proposed pipe culverts located between additional compensation for a change in scope of the work, however, the Engineer of Bridges & Structures the ends of the proposed R.C. Box Contractor will be paid for the quantity actually furnished at the unit price bid Culvert and the R.O.W. lines. -0.35% Layout of slope protection system may be varied in the field to suit ground Existing R.O.W. conditions as directed by the Engineer. 44'-0" / Ine NORTH BOUND SOUTH BOUND Excavation behind existing abutment walls shall be performed to balance front **€** Northbound 44'-0" Radial and back soil pressure before removing the existing superstructure. The Roadway PROFILE GRADE Local Tangent 🌣 Contractor shall sawcut the upper portion of the existing abutment at the stage Dimension Sta. 399+21.00 Southbound removal line before Stage I removal to ensure the remaining portion will not be F.A.I. 57 (P.G.L. @ @ Rdwy.) 871-33,11 *Structure Borings from Roodway prematurely damaged. Section 38-4B-1, Date May, 1962 A cantilevered sheet piling design does not appear feasible and additional members or other retention systems may be necessary. The Contractor shall submit a temporary soil retention system design including plan details and HORIZONTAL CURVE DATA € F.A.I. 57 8'-0" (I-57)P.I. Sta 396+10.81 calculations for review and acceptance by the Engineer. Shldr. Existing R.O.W. △ = 05°-14'-17.35" Shide 8'-0" Removal of the existing reinforced concrete slabs creates an unstable Line Shide D = 00°-30'-00" Shldr 1:2 (V:H) condition for the abutment walls directly supporting the superstructures. T = 524.18Bracing of the abutment walls or excavation behind the abutments may (Typ.) Stage Construction L = 1.047.63Stage Construction r-B-5 be required to ensure the stability of the abutment walls during structure R = 11.459.16 ⋖ removal and construction activities. Stone Riprap E = 11.98' A distance of half the length of the wingwall but not less than six feet Class A4 (Typ.) P.C. Sta. 309+86.63 of the barrel shall be poured monolithically with the winas. (See Sheet 7 of II) P.T. Sta. 401+34.26 A precast concrete culvert alternate will not be allowed. Sta. 399+25.80 Remove Crown Typ.) Sta. 399+21.00 Typ. Culvert . P.G. Elev. 655.76 Flow BILL OF MATERIAL Name Plate Sto. 399+16.16 INDEX OF SHEETS Stone Riprap, Class A4 Sq. Yd. 100 P.G. Elev. 655.68 (See Sheet 7 of II) Sq. Yd. 100 Each 1 Filter Fabric General Plan and Elevation Removal of Existing Structrues No.2 Existing 36" C.M.P. Stage Construction Details 2. 8-4 Furnishing and Erecting Structural Steel Pound | 4.520 Existing R.C.C.P. to be relocated Edge Beam Details Existing Structure 79,630 Reinforcement Bars Pound Stage I Culvert Construction Limits Median Pipe Drain Bar Splicers Each 242 Stage II Culvert Construction - Southbound Lanes Temporary Soll Temporary Soll Existing 36" C.M.P. to be relocated. Name Plates Stage II Culvert Construction - Northbound Lanes Each 36" C.M.P. Retention System Retention System Cu. Yd. 434.1 See Roadway Plans. Concrete Box Culverts Culvert Details 451-711 Temporary Soil Retention System Sa. Ft. 3,114 Bar Splicer Assembley Details Stage II Construction Stage I Construction Stage I Construction Stage II Construction Temporary Concrete Barrier ***See Special Provisions 10. - 11. Soil Boring Logs DESIGN SCOUR ELEVATION TABLE 87'-10" 88'-2" Upstream Downstream Design Scour Elevation (ft.) GENERAL PLAN & ELEVATION 638.40 638.10 176'-0" I-57 OVER WATERWAY INFORMATION PLAN DANFORTH TOWNSHIP DRAINAGE DITCH Exist. Low Grade Elev. 654.00 o Sta. 403+40 Drainage Area = 0.30 Sq. Mi. DESIGN STRESSES Prop. Low Grade Elev. 654.32 @ Sta. 403+40 F.A.I. ROUTE 57 FIELD UNITS Freq. 0 Opening (Sq.Ft.) Natural Head (Ft.) Headwater El. (Yr.) (c.f.s.) Exist. Prop. H.W.E. Exist. Prop. Exist. Prop. SECTION (38-3,4)RS-2, (38-4)BRI Flood f'c = 3,500 psi DESIGNED S.F.M. 150 | 120 | 128 | 647.2 | 0.0 | 0.0 | 647.2 | 647.2 fy = 60,000 psi IROQUOIS COUNTY 50 250 146 154 648.5 0.0 0.0 648.5 648.5 Design CHECKED -J.A.M. LOADING HS 20-44 & ALTERNATE STATION 399+21.00 Base 100 | 295 | 156 154 649.0 0.0 0.0 649.0 649.0 Allow 50#/sq. ft. for future wearing surface S.N. 038-2020 DRAWN S.A.P. 500 405 170 154 649.7 0.1 0.0 649.8 649.7

DESIGN SPECIFICATIONS

2002 AASHTO Specifications

Max. Calc.

10-Year Velocity through Exist. Structure = 1.3 f.p.s.

10-Year Velocity through Prop. Structure = 1.2 f.p.s.

CHECKED - S.F.M. & J.A.M.

FEHR-GRAHAM & ASSOCIATES, LLC
ENGINEERING AND SCIENCE CONSULTANT
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STRUCTURAL NO. 4277 (Expires 11/30/14)

JOB NO.1 468JOJ

190 57

Contract No. 6675

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